

What is claimed is:

1 A moving image reproduction system comprising:

means for acquiring a scanning line value of a display
and adjusting a timing for display changeover

5 specification.

2 The system defined in Claim 1, further comprising:

a frame buffer including a plurality of buffers;

a storage for storing moving image data compressive
encoded in a predetermined image compression encoding
10 scheme;

a video decoder for reading out compressed image data
from said storage, decoding said compressed image data
every one frame, and storing decoded image data into said
frame buffer;

15 an image storage buffer switch for switching its mode
every time image data for one frame is decoded and
controlling so as to always store a previously decoded
image and a currently decoded image into said buffer
memory;

20 a display controller for switching between said plural
buffers, to be displayed during the next vertical blanking
period, after reception of said display changeover
specification and displaying image data on said display;
and

25 a timing adjuster for acquiring a current scanning

line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

3 The system defined in Claim 2, wherein said storage
5 stores compressed image data; and wherein said frame
buffer stores moving image data decoded by said video
decoder; and wherein said plural buffers, specified by
said image storage buffer switch, stores moving image data
decoded by said video decoder; and wherein said timing
10 adjuster acquires a current scanning line from said
display controller and adjusts the timing with which said
display changeover specification is issued, in accordance
with the current scan line; and wherein said display
controller switches between said plural buffers to be
15 displayed during the next vertical blanking period after
reception of said display changeover specification and
then displays an image on said display.

4 The system defined in Claim 1, further comprising:

a frame buffer including a plurality of buffers;

20 a storage for storing moving image data compressive
encoded in a predetermined image compression encoding
scheme;

a video decoder for reading out compressed image data
from said storage, decoding said compressed image data
25 every one frame, and storing decoded image data into said

frame buffer;

an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded
5 image and a currently decoded image into said buffer memory;

a display controller for switching between said plural buffers to be displayed during the next vertical blanking period and displaying image data on said display, after
10 reception of said display changeover specification; and

a timing adjuster for acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance
15 with said scanning line value.

5 The system defined in Claim 4, wherein said storage stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video decoder; and wherein said plural buffers, specified by
20 said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing adjuster acquires a scanning line currently being drawn by said display, from said display controller, and adjusts the timing with which said display changeover
25 specification is issued, in accordance with the current

scan line; and wherein said display controller switches between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying an image on said display.

6 A moving image reproduction system comprising:

means for acquiring, when one frame is divided two half fields for displaying, a display scanning line value and adjusting the timing of display changeover specification to display a half field to be previously displayed.

7 The system defined in Claim 6, further comprising:

a frame buffer including a plurality of buffers;
a storage for storing moving image data compressive encoded in a predetermined image compression encoding scheme;

a video decoder for reading out compressed image data from said storage, decoding said compressed image data every one frame, and storing decoded image data into said frame buffer;

an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said buffer memory;

a display controller for switching between said plural buffers, to be displayed during the next vertical blanking period, after reception of said display changeover specification and displaying image data on said display;
and

a timing adjuster for acquiring a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

8 The system defined in Claim 7, wherein said storage stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video decoder; and wherein said plural buffers, specified by said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing adjuster acquires a current scanning line from said display controller and adjusts the timing with which said display changeover specification is issued, in accordance with the current scan line; and wherein said display controller switches between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and then displays an image on said display.

9 The system defined in Claim 6, further comprising:
a frame buffer including a plurality of buffers;

a storage for storing moving image data compressive encoded in a predetermined image compression encoding scheme;

5 a video decoder for reading out compressed image data from said storage, decoding said compressed image data every one frame, and storing decoded image data into said frame buffer;

10 an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said buffer memory;

15 a display controller for switching between said plural buffers to be displayed during the next vertical blanking period and displaying image data on said display, after reception of said display changeover specification; and

20 a timing adjuster for acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

25 10 The system defined in Claim 9, wherein said storage stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video decoder; and wherein said plural buffers, specified by

said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing adjuster acquires a scanning line currently being drawn by said display, from said display controller, and adjusts the timing with which said display changeover specification is issued, in accordance with the current scan line; and wherein said display controller switches between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying an image on said display.

11 A moving image reproduction system comprising:

means for smoothly reproducing moving image data by adjusting the timing with which display changeover specification is issued, based on a current scanning line value.

12 The system defined in Claim 11, further comprising:

a frame buffer including a plurality of buffers;

a storage for storing moving image data compressive encoded in a predetermined image compression encoding scheme;

a video decoder for reading out compressed image data from said storage, decoding said compressed image data every one frame, and storing decoded image data into said frame buffer;

an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said buffer memory;

a display controller for switching between said plural buffers, to be displayed during the next vertical blanking period, after reception of said display changeover specification and displaying image data on said display; and

a timing adjuster for acquiring a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

13 The system defined in Claim 12, wherein said storage stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video decoder; and wherein said plural buffers, specified by said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing adjuster acquires a current scanning line from said display controller and adjusts the timing with which said display changeover specification is issued, in accordance with the current scan line; and wherein said display controller switches between said plural buffers to be

displayed during the next vertical blanking period after reception of said display changeover specification and then displays an image on said display.

14 The system defined in Claim 11, further comprising:

5 a frame buffer including a plurality of buffers;

a storage for storing moving image data compressive encoded in a predetermined image compression encoding scheme;

10 a video decoder for reading out compressed image data from said storage, decoding said compressed image data every one frame, and storing decoded image data into said frame buffer;

15 an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said buffer memory;

20 a display controller for switching between said plural buffers to be displayed during the next vertical blanking period and displaying image data on said display, after reception of said display changeover specification; and

25 a timing adjuster for acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance

with said scanning line value.

15 The system defined in Claim 14, wherein said storage stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video
5 decoder; and wherein said plural buffers, specified by said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing adjuster acquires a scanning line currently being drawn by said display, from said display controller, and adjusts
10 the timing with which said display changeover specification is issued, in accordance with the current scan line; and wherein said display controller switches between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying an image
15 on said display.

16 A moving image reproduction system comprising:

means for adjusting the display timing of a half field to be previously displayed, with said display scanning
20 line value.

17 The system defined in Claim 16, further comprising:

a frame buffer including a plurality of buffers;

a storage for storing moving image data compressive encoded in a predetermined image compression encoding
25 scheme;

a video decoder for reading out compressed image data from said storage, decoding said compressed image data every one frame, and storing decoded image data into said frame buffer;

5 an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said buffer memory;

10 a display controller for switching between said plural buffers, to be displayed during the next vertical blanking period, after reception of said display changeover specification and displaying image data on said display; and

15 a timing adjuster for acquiring a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

18 The system defined in Claim 17, wherein said storage
20 stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video decoder; and wherein said plural buffers, specified by said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing
25 adjuster acquires a current scanning line from said

display controller and adjusts the timing with which said display changeover specification is issued, in accordance with the current scan line; and wherein said display controller switches between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and then displays an image on said display.

19 The system defined in Claim 16, further comprising:

a frame buffer including a plurality of buffers;

a storage for storing moving image data compressive encoded in a predetermined image compression encoding scheme;

a video decoder for reading out compressed image data from said storage, decoding said compressed image data every one frame, and storing decoded image data into said frame buffer;

an image storage buffer switch for switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said buffer memory;

a display controller for switching between said plural buffers to be displayed during the next vertical blanking period and displaying image data on said display, after reception of said display changeover specification; and

a timing adjuster for acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

20 The system defined in Claim 19, wherein said storage stores compressed image data; and wherein said frame buffer stores moving image data decoded by said video decoder; and wherein said plural buffers, specified by said image storage buffer switch, stores moving image data decoded by said video decoder; and wherein said timing adjuster acquires a scanning line currently being drawn by said display, from said display controller, and adjusts the timing with which said display changeover specification is issued, in accordance with the current scan line; and wherein said display controller switches between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying an image on said display.

21 A moving image reproduction method comprising the steps of:

acquiring a display scanning line value; and
adjusting the timing of display changeover specification.

22 The method defined in Claim 21, further comprising the steps of:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a memory;

reading out compressed image data from said memory, decoding said compressed image data every one frame, and storing decoded image data into a frame buffer using a video decoder, said frame buffer including a plurality of buffers;

switching its mode every time image data for one frame is decoded and controlling, using an image storage buffer switch, so as to always store a previously decoded image and a currently decoded image into said buffer memory;

switching between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying image data on said display; and

acquiring, using a timing adjuster, a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

23 The system defined in Claim 22, further comprising the steps of:

storing compressed moving image data using said

memory;

storing moving image data decoded by said video
decoder, into said frame buffer;

storing moving image data decoded in said video
5 decoder into plural buffers specified by said image buffer
changeover switch;

acquiring a current scanning line from said display
controller and adjusting the timing with which said
display changeover specification is issued, in accordance
10 with the current scanning line, by means of said timing
adjuster; and

switching between said plural buffers to be displayed
during the next vertical blanking period, by means of said
display controller, after reception of said display
15 changeover specification and then displaying an image on
said display.

24 The system defined in Claim 21, further comprising:

storing moving image data compressive encoded in a
predetermined image compression encoding scheme, into a
20 memory;

reading out compressed image data from said memory,
decoding said compressed image data every one frame, and
storing decoded image data into a frame buffer by means of
a video decoder, said frame buffer including a plurality
25 of buffers;

switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said frame buffer, by means of an image storage buffer switch;

switching between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying image data on said display, by means of a display controller; and

acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover specification is issued in accordance with said scanning line value, by means of a timing adjuster.

The system defined in Claim 24, further comprising the steps of:

storing compressed moving image data by means of a storage;

storing moving image data decoded by said video decoder into said frame buffer;

storing moving image data decoded by said video decoder into plural buffers specified by said image storage buffer switch;

acquiring, by means of said timing adjuster, a

scanning line currently being drawn by said display, from said display controller, and adjusting the timing with which said display changeover specification is issued in accordance with the current scan line; and

switching, by means of said display controller, between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and then displaying an image on said display.

26 A moving image reproduction method comprising the steps of:

acquiring, when one frame is divided two half fields for displaying, a display scanning line value to display a half field to be previously displayed; and

adjusting the timing of display changeover specification.

27 The method defined in Claim 26, further comprising the steps of:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a memory;

reading out compressed image data from said memory, decoding said compressed image data every one frame, and storing decoded image data into a frame buffer using a video decoder, said frame buffer including a plurality of

buffers;

switching its mode every time image data for one frame is decoded and controlling, using an image storage buffer switch, so as to always store a previously decoded image and a currently decoded image into said buffer memory;

switching between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying image data on said display; and

acquiring, using a timing adjuster, a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

28 The system defined in Claim 27, further comprising the steps of:

storing compressed moving image data using said memory;

storing moving image data decoded by said video decoder, into said frame buffer;

storing moving image data decoded in said video decoder into plural buffers specified by said image buffer changeover switch;

acquiring a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance

with the current scanning line, by means of said timing adjuster; and

switching between said plural buffers to be displayed during the next vertical blanking period, by means of said display controller, after reception of said display changeover specification and then displaying an image on said display.

29 The system defined in Claim 26, further comprising:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a memory;

reading out compressed image data from said memory, decoding said compressed image data every one frame, and storing decoded image data into a frame buffer by means of a video decoder, said frame buffer including a plurality of buffers;

switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said frame buffer, by means of an image storage buffer switch;

switching between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying image data on said display, by means of a display

controller; and

acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover

5 specification is issued in accordance with said scanning line value, by means of a timing adjuster.

30 The system defined in Claim 29, further comprising the steps of:

10 storing compressed moving image data by means of a storage;

storing moving image data decoded by said video decoder into said frame buffer;

15 storing moving image data decoded by said video decoder into plural buffers specified by said image storage buffer switch;

20 acquiring, by means of said timing adjuster, a scanning line currently being drawn by said display, from said display controller, and adjusting the timing with which said display changeover specification is issued in accordance with the current scan line; and

25 switching, by means of said display controller, between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and then displaying an image on said display.

31 A moving image reproduction method comprising the steps of:

adjusting the timing with which display changeover specification is issued, based on a current scanning line value; and

smoothly reproducing moving image data.

32 The method defined in Claim 31, further comprising the steps of:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a memory;

reading out compressed image data from said memory, decoding said compressed image data every one frame, and storing decoded image data into a frame buffer using a video decoder, said frame buffer including a plurality of buffers;

switching its mode every time image data for one frame is decoded and controlling, using an image storage buffer switch, so as to always store a previously decoded image and a currently decoded image into said buffer memory;

switching between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying image data on said display; and

acquiring, using a timing adjuster, a current scanning

line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with said scanning line value.

33 The system defined in Claim 32, further comprising the steps of:

storing compressed moving image data using said memory;

storing moving image data decoded by said video decoder, into said frame buffer;

storing moving image data decoded in said video decoder into plural buffers specified by said image buffer changeover switch;

acquiring a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance with the current scanning line, by means of said timing adjuster; and

switching between said plural buffers to be displayed during the next vertical blanking period, by means of said display controller, after reception of said display changeover specification and then displaying an image on said display.

34 The system defined in Claim 31, further comprising:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a

memory;

reading out compressed image data from said memory,
decoding said compressed image data every one frame, and
storing decoded image data into a frame buffer by means of
5 a video decoder, said frame buffer including a plurality
of buffers;

switching its mode every time image data for one frame
is decoded and controlling so as to always store a
previously decoded image and a currently decoded image
10 into said frame buffer, by means of an image storage
buffer switch;

switching between said plural buffers to be displayed
during the next vertical blanking period after reception
of said display changeover specification and displaying
15 image data on said display, by means of a display
controller; and

acquiring a scanning line, currently being drawn by
said display, from said display controller and adjusting
the timing with which said display changeover
20 specification is issued in accordance with said scanning
line value, by means of a timing adjuster.

35 The system defined in Claim 34, further comprising the
steps of:

storing compressed moving image data by means of a
25 storage;

storing moving image data decoded by said video decoder into said frame buffer;

storing moving image data decoded by said video decoder into plural buffers specified by said image storage buffer switch;

acquiring, by means of said timing adjuster, a scanning line currently being drawn by said display, from said display controller, and adjusting the timing with which said display changeover specification is issued in accordance with the current scan line; and

switching, by means of said display controller, between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and then displaying an image on said display.

36 A moving image reproduction method comprising the steps of:

adjusting the display timing of a half field to be previously displayed, in accordance with said display scanning line value.

37 The method defined in Claim 36, further comprising the steps of:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a memory;

reading out compressed image data from said memory,
decoding said compressed image data every one frame, and
storing decoded image data into a frame buffer using a
video decoder, said frame buffer including a plurality of
5 buffers;

switching its mode every time image data for one frame
is decoded and controlling, using an image storage buffer
switch, so as to always store a previously decoded image
and a currently decoded image into said buffer memory;

10 switching between said plural buffers to be displayed
during the next vertical blanking period after reception
of said display changeover specification and displaying
image data on said display; and

acquiring, using a timing adjuster, a current scanning
15 line from said display controller and adjusting the timing
with which said display changeover specification is issued,
in accordance with said scanning line value.

38 The system defined in Claim 37, further comprising the
steps of:

20 storing compressed moving image data using said
memory;

storing moving image data decoded by said video
decoder, into said frame buffer;

25 storing moving image data decoded in said video
decoder into plural buffers specified by said image buffer

changeover switch;

acquiring a current scanning line from said display controller and adjusting the timing with which said display changeover specification is issued, in accordance
5 with the current scanning line, by means of said timing adjuster; and

switching between said plural buffers to be displayed during the next vertical blanking period, by means of said display controller, after reception of said display
10 changeover specification and then displaying an image on said display.

39 The system defined in Claim 36, further comprising:

storing moving image data compressive encoded in a predetermined image compression encoding scheme, into a
15 memory;

reading out compressed image data from said memory, decoding said compressed image data every one frame, and storing decoded image data into a frame buffer by means of a video decoder, said frame buffer including a plurality
20 of buffers;

switching its mode every time image data for one frame is decoded and controlling so as to always store a previously decoded image and a currently decoded image into said frame buffer, by means of an image storage
25 buffer switch;

switching between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and displaying image data on said display, by means of a display

5 controller; and

acquiring a scanning line, currently being drawn by said display, from said display controller and adjusting the timing with which said display changeover specification is issued in accordance with said scanning line value, by means of a timing adjuster.

10 40 The system defined in Claim 39, further comprising the steps of:

storing compressed moving image data by means of a storage;

15 storing moving image data decoded by said video decoder into said frame buffer;

storing moving image data decoded by said video decoder into plural buffers specified by said image storage buffer switch;

20 acquiring, by means of said timing adjuster, a scanning line currently being drawn by said display, from said display controller, and adjusting the timing with which said display changeover specification is issued in accordance with the current scan line; and

25 switching, by means of said display controller,

between said plural buffers to be displayed during the next vertical blanking period after reception of said display changeover specification and then displaying an image on said display.

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